

### Claims

1. Gateway device (3; 4) for connecting a respective bus system (7; 8) with a common network layer (300) that is designed to build a superior network by connecting at least one further bus system (8; 7) via at least one further gateway device (4; 3) to said common network layer (300), said gateway device (3; 4)  
5 comprising a bus service interface (31; 41) to access all functionality and commands of a further bus system (8; 7) via said common network layer (300) from an intelligent gateway (1) within said superior network.

2. Gateway device according to claim 1, **characterized in that** said bus  
10 service interface (31; 41) is able to post bus events on said common network layer (300) in case a device (5; 6) within said respective bus system (7; 8) indicates the possibility to communicate via said common network layer (300).

3. Gateway device according to claim 1 or 2, **characterized in that** said bus  
15 service interface (31; 41) is usable by a device presenter (12, 13; 14) to communicate with the corresponding real device (5; 6) connected to said respective bus system (7; 8).

4. Gateway device according to anyone of claims 1 to 3, **characterized in**  
20 **that** said bus service interface (31; 41) is able to represent a virtual device (32; 42) to its respective bus system (7; 8) based on a corresponding device emulator (15; 16).

5. Gateway device according to anyone of claims 1 to 4, **characterized in**  
25 **that** said bus service interface (31; 41) communicates via said common network layer (300) according to the Universal Plug and Play protocol set.

6. Gateway device according to anyone of claims 1 to 5, **characterized by** an  
30 intelligent gateway according to anyone of claims 7 to 12.

7. Intelligent gateway (1) for communicating between gateway devices (3; 4), which respectively connect a respective bus system (7; 8), which comprises at least one physical device (5; 6), with a common network layer (300), comprising a static or dynamic possibility to provide at least one device presenter (12, 13;

14) and/or at least one device emulator (16; 15) of at least one physical device (5; 6) to said common network layer (300).

8. Intelligent gateway according to claim 7, **characterized by** a device  
5 manager (11) that monitors bus events for new devices, which are posted on said common network layer (300), and finds, loads and assigns corresponding device presenters and/or emulators.

9. Intelligent gateway according to claim 8, **characterized in that** said  
10 device manager (11) loads device presenters and/or emulators from external sources.

10. Intelligent gateway according to anyone of claims 7 to 9, **characterized in that** a device presenter presents a real device on a bus system as a generic  
15 abstract device or service.

11. Intelligent gateway according to anyone of claims 7 to 10, **characterized in that** a device emulator emulates a device on a bus system based on a generic abstract device or service presentation.  
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12. Intelligent gateway according to claim 10 or 11, **characterized in that** said generic abstract device or service presentation is a presentation according to the Universal Plug and Play protocol set.

25 13. Superior network that integrates at least two bus systems, each of which comprises a respective gateway device according to one of claims 1 to 6, comprising

at least one intelligent gateway according to anyone of claims 7 to 12, and  
a common network layer (300) to which the respective gateways and said  
30 at least one intelligent gateway are connected.